

CLAIMS

What I claim as my invention is the following:

5 1 A biaxially oriented multilayer film usable to form adhesive labels to be attached to containers, such as bottles and cans, said film including a core layer comprising polypropylene and a migratory slip agent and an outer slip layer on one side of the core layer, said slip layer including primarily polypropylene, by weight, and a minor percent, by weight, of an additive, said additive and said migratory slip agent being present in amounts to provide a COF on the surface of the slip layer of 10 formed label for the slip layer of at least 50%.

2 The biaxially oriented multilayer film of claim 1, wherein said migratory slip agent in the core layer is an amide.

3 The biaxially oriented multilayer film of claim 2, wherein the amide is behenamide.

15 4 The biaxially oriented multilayer film of claim 2, wherein said migratory amide is present in a percentage, by weight, of at least 0.10%, based upon the weight of the core layer.

20 5 The biaxially oriented multilayer film of claim 4, wherein the percentage, by weight, of the migratory amide is about 0.25% or greater based upon the weight of the core layer.

6 The biaxially oriented multilayer film of claim 4, wherein the percentage, by weight, of the migratory amide is in the range of about 0.2 - 0.3% based upon the weight of the core layer.

25 7 The biaxially oriented multilayer film of claim 1, wherein said additive in the slip layer is an antistatic agent.

8 The biaxially oriented multilayer film of claim 7, wherein the antistatic agent includes an ethoxylated alkyamine and/or an ethoxylated alkyamide.

9 The biaxially oriented multilayer film of claim 8, wherein the antistatic agent includes an ethoxylated alkyamine.

30 10 The biaxially oriented multilayer film of claim 8, wherein said ethoxylated alkyamine and/or ethoxylated alkyamide is either physically blended with or chemically reacted with an ester.

11. The biaxially oriented multilayer film of claim 9, wherein said ethoxylated alkyamine is either physically blended with or chemically reacted with an ester.

5 12. The biaxially oriented multilayer film of claim 1, wherein said multilayer film includes an additional outer layer on the side of the core layer opposite said slip layer, said additional outer layer having a surface for receiving printed indicia thereon and/or being bondable to a surface of an additional film employed to form labels.

10 13. The biaxially oriented multilayer film of claim 1, wherein said outer slip layer is free of any oxidative treatment.

14 The biaxially oriented multilayer film of claim 7, wherein said outer slip layer is free of any oxidative treatment.

15 15 The biaxially oriented multilayer film of claim 8, wherein said outer slip layer is free of any oxidative treatment.

16 The biaxially oriented multilayer film of claim 9, wherein said outer slip layer is free of any oxidative treatment.

17 The biaxially oriented multilayer film of claim 1, wherein the adhesion is at least 70%.

20 18 The biaxially oriented multilayer film of claim 1, wherein the adhesion is at least 90%.

19 The biaxially oriented multilayer film of claim 1, wherein the adhesive employed on the formed label is a hot melt adhesive.

20 The biaxially oriented multilayer film of claim 19, wherein the adhesion is at least 70%.

25 21 The biaxially oriented multilayer film of claim 19, wherein the adhesion is at least 90%.

22 The biaxially oriented multilayer film of claim 1, wherein the COF is no greater than 0.35.

30 23 The biaxially oriented multilayer film of claim 17, wherein the COF is no greater than 0.35.

24 The biaxially oriented multilayer film of claim 18, wherein the COF is no greater than 0.35.

25 The biaxially oriented multilayer film of claim 19, wherein the COF is no greater than 0.35.

5 26 The biaxially oriented multilayer film of claim 20, wherein the COF is no greater than 0.35.

27 The biaxially oriented multilayer film of claim 21, wherein the COF is no greater than 0.35.

10 28 A biaxially oriented multilayer label to be attached to containers, such as bottles and cans, said label including a core layer comprising polypropylene and a migratory slip agent, an outer slip layer on one side of the core layer, said slip layer including primarily polypropylene, by weight, and a minor percent, by weight, of an additive, an inner layer on the side of the core layer opposite the outer slip layer, and an additional film having an inner surface adhered to an outer surface of the inner layer and an opposed, outer surface including an adhesive thereon, printed indicia on the outer surface of the inner layer or on the inner surface of the additional film, one end of said outer surface of said additional film being attachable to a container surface through the adhesive thereon and an opposed end of said outer surface of said additional film overlapping and being adhesively attachable to an outer surface of the slip layer when the label is attached to a container, said additive and said migratory amide being present in amounts to provide a COF on the surface of the slip layer of no greater than 0.45 and to provide an adhesion of the adhesive for the slip layer of at least 50%.

25 29 The biaxially oriented multilayer label of claim 28, wherein said migratory slip agent in the core layer is an amide.

30 30 The biaxially oriented multilayer label of claim 29, wherein the amide is behenamide.

30 31 The biaxially oriented multilayer label of claim 29, wherein said migratory amide is present in a percentage, by weight, of at least 0.10%, based upon the weight of the core layer.

32 The biaxially oriented multilayer label of claim 31 wherein the percentage, by weight, of the migratory amide is about 0.25% or greater based upon the weight of the core layer.

5 33 The biaxially oriented multilayer label of claim 31, wherein the percentage, by weight, of the migratory amide is in the range of about 0.2 - 0.3% based upon the weight of the core layer.

34 The biaxially oriented multilayer label of claim 28 wherein said additive in the slip layer is an antistatic agent.

10 ~~35~~ The biaxially oriented multilayer label of claim 34, wherein the antistatic agent includes an ethoxylated alkyamine and/or an ethoxylated alkyamide.

36 The biaxially oriented multilayer label of claim 35, wherein the antistatic agent includes an ethoxylated alkyamine.

15 37. The biaxially oriented multilayer label of claim 35, wherein said ethoxylated alkyamine and/or ethoxylated alkyamide is either physically blended with or chemically reacted with an ester.

20 ~~38~~ The biaxially oriented multilayer label of claim 36, wherein said ethoxylated alkyamine is either physically blended with or chemically reacted with an ester.

~~39~~ The biaxially oriented multilayer label of claim 28, wherein said outer slip layer is free of any oxidative treatment.

40 The biaxially oriented multilayer film of claim 28, wherein the adhesion is at least 70%.

25 41 The biaxially oriented multilayer film of claim 28, wherein the adhesion is at least 90%.

42 The biaxially oriented multilayer label of claim 28, wherein the adhesive is a hot melt adhesive.

43 The biaxially oriented multilayer label of claim 43, wherein the adhesion is at least 70%.

30 ~~44~~ The biaxially oriented multilayer label of claim 43, wherein the adhesion is at least 90%.

46 The biaxially oriented multilayer label of claim 28, wherein the COF is no greater than 0.35.

47 The biaxially oriented multilayer label of claim 41, wherein the COF is no greater than 0.35.

5 48 The biaxially oriented multilayer label of claim 42, wherein the COF is no greater than 0.35.

49 The biaxially oriented multilayer label of claim 43, wherein the COF is no greater than 0.35.

10 50 The biaxially oriented multilayer label of claim 44, wherein the COF is no greater than 0.35.

51 The biaxially oriented multilayer label of claim 45, wherein the COF is no greater than 0.35.